

IN THE SPECIFICATION:

Please insert the sentence, which does not constitute new matter, marked-up below on page 7, line 10 as shown in the following replacement section per 37 CFR 1.125:

Fig. 10 is cross-sectional diagram of a contoured evaporation tube wall having various capillary channels and employing the electromagnet/heater of Fig. 3.

Fig. 11 is a cross-sectional diagram of the contoured evaporation tube wall of Fig. 10 fitted with a mesh and including additional perforations.

Fig. 12 shows the embodiment of Fig. 3 angled in a near horizontal position.

Please insert the following paragraphs, which do not constitute new matter, beginning on page 27, line 14 as shown in the following marked-up replacement section per 37 CFR 1.125:

Fig. 11 is a cross-sectional diagram of a contoured evaporation tube wall 240 fitted with a mesh 240 and including additional perforations 202. The mesh 240 further increases effective evaporation surface area as oil flows around the individual mesh fibers. The additional perforations 202 ensure that the entire surface 238 is coated with oil.

With reference to Fig. 2, Fig. 10, and Fig. 12, the system 50 is an efficient fluid cleaning system 50 that includes a first means for changing the pressure of a fluid, such as oil, from a first pressure to a second pressure, the second pressure lower than the first pressure. In the present specific embodiment, the first pressure, which occurs in the inlet 58 is approximately engine pressure, and the second pressure, which occurs in the contaminant removal chamber 80 is approximately atmospheric pressure. In the specific embodiment of Fig. 3, the first means includes the inlet orifice 62, the filter 52, the holes 78 or cavitation jets 236 of Fig. 10 in the evaporation surface 80 or 238, and the vent 86, which causes the chamber 54 to be at approximately atmospheric pressure.

Furthermore, the efficient fluid cleaning system 50 includes a second means for distributing the fluid within the evaporation chamber 54 at the second pressure, wherein

the evaporation chamber 54 includes an evaporation surface 80, 238 having capillary channels 232, 222 for dispersing oil about the evaporation surface via capillary action to facilitate evaporation of contaminants from within the fluid. In the present specific embodiment, the second means is implemented via the capillary channels 232, 222, and the wall 230 or the threaded second cylindrical wall 77 with accompanying holes 78 therethrough. Those skilled in the art will appreciate that other hardware may be employed to implement the first means and second means without departing from the scope of the present invention.

The system 50 includes a means for employing siphoning action to disperse the fluid about the evaporation surface 54, 238 when the efficient fluid cleaning system 50 is installed at an angle so that the evaporation chamber 54 is angled (see Fig. 12). In the present specific embodiment, the means for employing siphoning action is implemented via the capillary channels 222, 232 or threads of the second cylindrical wall 79.

The system 50 further includes means for squirting the fluid, such as oil within the evaporation chamber 54 to enhance effective evaporation surface area. In the present specific embodiment, the means for squirting is implemented via the holes 78 in the threaded surface 80 or the cavitation jets 236 of the surface 238 of Fig. 10. In the cavitation jets 236 also act as a means for causing cavitation of volatile contaminants to facilitate evacuation of the contaminants from the system 50.

In the present specific embodiment, the first means may be considered to include the cavitation jets 236 in an implementation wherein the second pressure within the chamber 54 is sufficiently low relative to the first pressure to promote cavitation. As discussed above, one skilled in the art may employ Bernoulli's equation and the continuity equation to calculate the requisite pressure drop to produce cavitation via the cavitation jets 236.

In the present specific embodiment, the second means, which facilitates distributing fluid in an evaporation chamber may be considered to further include, in addition to the spiral capillary channels implemented via the threaded surface 54 and the channels 222 and 232 of Fig. 10, the cavitation jets 236. As discussed above, the cavitation jets 236 help to

facilitate evaporation of contaminants within the fluid to be cleaned, which is oil in the present embodiment.

The capillary channels 222, 232 of the surface 238 of Fig. 10 and the general contour of the surface 238 in addition to the cavitation jets 236 and threads of the surface 54 of Fig. 3 and Fig. 12 may be considered as implementing a means for expanding an evaporative surface area of the evaporation chamber 54 over that of a substantially flat surface.

In the present specific embodiment, the filter 52 and accompanying jet 62 for creating a centrifugal flow may be considered as implementing first means for removing solid matter from the fluid to be cleaned. The cavitation jets 236 of Fig. 10 and the holes 78 of Fig. 3 and Fig. 12 may be considered as implementing a second means second means for facilitating vaporizing certain liquids and/or gases in the fluid to be cleaned by squirting the fluid in an evaporation chamber 54 to increase exposed surface area of the fluid in the evaporation chamber 54.

Those skilled in the art will appreciate that other hardware may be employed to implement the various means discussed above without departing from the scope of the present invention. --